UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,903	07/31/2003	Kenji Ito	Q76757	9611

65565   7590   07/19/2007
SUGHRUE-265550
2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER
HENN, TIMOTHY J

ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
07/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _17 April 2007 and 30 January 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-15_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6 and 9-14_ is/are rejected.

7)☒ Claim(s) _7,8 and 15_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _10 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 17 April 2007 and 30 January 2007 have been fully

considered but they are not persuasive.

2.   In the 17 April 2007 and 30 April 2007 responses, Applicant argues that cyclically

deleting images as taught by Miyazaki would not be desirable in the camera of

Visvanathan since the camera of Visvanathan teaches still image capture from a

continuous stream of video. However, Visvanathan does not disclose that it is desirable

to store the continuous stream of video. On the other hand, Visvanathan does disclose

capturing still images using a "push model" (c. 1, ll. 61-65) and discloses that in such a

model video frames are stored in a buffer mechanism (i.e. a temporary storage; c. 1, ll.

41-46). Visvanathan further discloses still image capture in such applications as video

conferencing (c. 1, ll. 12-15). The examiner notes that buffers are typically temporary

storage mechanisms and not meant for long term storage (i.e. similar to the storage

system of Miyazaki) and in video conferencing there is no need to store the video

information since the video is intended to be transferred to a remote system. Therefore,

contrary to Applicant's arguments, storing the continuous video stream on a long term

scale is not a desirable feature in Visvanathan and even if the storage system of

Miyazaki were taught in the manner described by Applicant, the loss of image frames

would not be contrary to the teachings of Visvanathan. However, as previously written,

the rejection of claim 1 was unclear as to how the storage systems of Visvanathan and

Miyazaki were being combined. To clarify, the rejection of claim 1 has been amended.

Specifically, Visvanathan discloses a storage system comprising a removable recording medium (c. 3, ll. 56-59) for storage of captured image data. Since this storage device provides storage for captured image data, it would be obvious to store both video streaming data (i.e. functioning as a buffer storage device for holding video frames) and still image data. Due to this clarification of claim 1, the action will be made non-final.

3.   In the 30 April 2007 reply (e.g. pages 12 and 13) Applicant argues that Visvanathan discloses a system which does not require the use of interrupts while Miyazaki is interrupt dependent. However, at best, Visvanathan can be said to teach away from interrupts over USB (i.e. "by way of interrupt pipes on USB"). Miyazaki discloses the use of processor interrupts (i.e. interrupts sent to system controller 38) and not USB interrupts. Therefore, since Miyazaki does not disclose the use of USB interrupts, one of ordinary skill in the art would not be lead away from the use of the Miyazaki image review system in the system of Visvanathan due to Miyazaki's use of interrupt processing.

4.   In the 30 April 2007 reply (e.g. pages 13 and 14) Applicant argues that a search means would not necessarily be inherent as argued by the examiner. However, Visvanathan discloses a system which receives a stream of video and performs specific operations based on the inclusion of a specific bit. The examiner notes that in order to determine whether that bit has been set, it must be checked or "searched for". For example, figure 3, step 316 of Visvanathan discloses a test to see whether or not the LSB of the luminance is 1. As broadly as claimed, the element of Visvanathan which performs this test can be read as a "search means" as claimed.

5.   Finally, Applicant challenges the use of Official Notice for a

compression/decompression means as claimed. In response the rejections of claim 1

has been amended to include evidentiary support.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-6 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Visvanathan et al. (US 6,359,643) in view of Miyazaki (US 2005/0231631) in view

of Tamashima (US 7,139,020).

[claim 1]

Regarding claim 1, Visvanathan discloses a digital camera comprising: an image

pickup device for shooting a subject image (Figure 1, Item 114); recording the image

data onto a recording medium (c. 3, ll. 52-62); marking instruction means for instruction

addition of marking data to an arbitrary frame in recording the motion picture data onto

the recording medium (Figure 3, Step 308); marking means for adding marking data to a

frame specified by the marking instruction means (Figure 3, Step 310), search means

for detecting a frame where the marking data is added (Figure 1, Item 316; c. 3, ll. 1-30)

and playback means (c. 3, ll. 62-67). Visvanathan further discloses a recording medium

onto which captured frames can be stored (c. 3, ll. 56-57). However, Visvanathan does

not disclose displaying a predetermined number of frames in the neighborhood of the detected frame and selecting a frame to store as the still image.

Miyazaki discloses an image pickup apparatus which, when an image is captured, allows a user to select an image from an image taken at a time when a shutter button was pressed and a pre-selected number of frames taken before and after than image and stores the selected frame into memory to ensure that a picture at a desired timing is captured (Figure 1; Paragraphs 0008-0009 and 0034-0035). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a display and selection system as taught by Miyazaki and to store a selected file in the storage system of Visvanathan to capture a still picture at a desired timing. However, Visvanathan in view of Miyazaki does not specifically disclose the use of a compression and decompression circuit for compressing motion picture data on a per frame basis and decompressing the motion picture frames for playback.

Tamashima discloses a camera system in which images are stored in a buffer memory (Figure 24). Tamashima discloses that after the images are captured they are compressed prior to storage (e.g. Figure 2, Item S5) and later decompressed (e.g. Figure 2, Item S13) to undergo further processing (e.g. Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compress the image frames of Visvanathan in view of Miyazaki prior to storing the image frames and to decompress the compressed image frames prior to performing

further signal processing since such compression would reduce the storage requirements needed to store the image frames (e.g. c. 8, ll. 31-39).

Visvanathan discloses a search system which constantly monitors incoming data for a specific bit, and uses a separate program for performing the still image processing (Figure 3, Item 318; c. 3, ll. 14-20) and further discloses that multiple frames can be captured (e.g. c. 3, ll. 27-30). Miyazaki discloses a system which reads out data from a storage medium which neighbors a captured image in time (e.g. Figure 1). Since the system of Visvanathan does not stop monitoring for a marked image (i.e. uses a third party program for performing still image processing instead of switching to a still image processing mode for example), the search means of Visvanathan would search for a marked image while the separate program reads data from the recording medium for displaying the selection screen (i.e. Miyazaki, Figure 1). Since claim 1 as written does not require searching for marked data from motion picture data read from the recording medium (i.e. reading out picture data from the recording medium and searching for marking data in the picture data read out from the recording medium), the search means of Visvanathan meets the limitations as claimed.

[claim 2]

Regarding claim 2, Visvanathan discloses a recording medium which is a removable memory card (i.e. nonvolatile recording medium detachable form the camera unit; c. 3, ll. 56-59).

[claim 3]

Regarding claim 3, Visvanathan discloses an interface for outputting still picture

data recorded on the recording medium to an external device (e.g. a display; c. 5, l. 63 -

c. 6, l. 7).

[claim 4]

Regarding claim 4, Visvanathan discloses a marking instruction means which

instructs addition of marking data to the arbitrary frame in accordance with an

instruction from a user (Figure 3, Items 302 and 304). The examiner notes that

following the teachings of Tamashima, the frames would need to be decompressed

before any further processing (i.e. display) could occur.

[claim 5]

Regarding claim 5, Miyazaki discloses a playback means which plays back the

frame and a predetermined number of frames in the neighborhood of the frame prior to

the selection of the arbitrary frame (e.g. Figure 1, $t=-4\Delta t$ to $t=4\Delta t$).

[claim 6]

Regarding claim 6, Miyazaki discloses a playback means which replays the

decompressed frame and the number of neighboring frames in the neighborhood of the

decompressed frame using an array of frames (Figure 1). The examiner notes, as

broadly as claimed, such a playback system can be said to be "less than half of a

regular playback speed of the playback means" since the displayed frames are not

changed. For example, a regular playback of 30 frames/second would change the

displayed frame once every $1/30^{th}$ of a second. Since the playback shown in Figure 1

does not change the frame, it can be considered to be playing back at a speed "less

than half of a regular playback speed" as claimed.

[claim 9]

Regarding claim 9, Miyazaki discloses a selection means which selects an

arbitrary frame displayed during the playback in accordance with an instruction form a

user (e.g. Paragraph 0035).

[claim 10]

Regarding claim 10, Miyazaki discloses a selection means which selects an

arbitrary frame displayed during the playback in accordance with an instruction form a

user (e.g. Paragraph 0035).

[claim 11]

Regarding claim 11, Miyazaki discloses a predetermined number of frames in the

neighborhood of the frame which are frames that precede the frame (e.g. Figure 1).

The examiner notes that following the teachings of Tamashima, the frames would need

to be decompressed before any further processing (i.e. display) could occur.

[claim 12]

Regarding claim 12, Miyazaki discloses a predetermined number of frames in the

neighborhood of the frame which are subsequent to the frame. The examiner notes that

following the teachings of Tamashima, the frames would need to be decompressed

before any further processing (i.e. display) could occur.

[claim 13]

Regarding claim 13, Miyazaki discloses a predetermined number of frames in the

neighborhood of the frame which are preceding frames and subsequent frames to the

frame (e.g. Figure 1). The examiner notes that following the teachings of Tamashima, the frames would need to be decompressed before any further processing (i.e. display) could occur.

[claim 14]

Regarding claim 14, Visvanathan teaches capturing multiple pictures (e.g. c. 3, ll. 27-30; "captures", i.e. plural). Following the teachings of Visvanathan and Miyazaki, capturing multiple still pictures would include multiple marking instructions, multiple marking data additions and multiple detections for the plurality of frames as described.

Allowable Subject Matter

8.   Claims 7, 8 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claims 7 and 8]

Regarding claims 7 and 8, the prior art does not teach or fairly suggest a playback speed for a selection system as claimed which is $1/4^{th}$ of the regular speed. While it is known in the prior art to provide slow-motion playback of video or a sequence of frames, the use of such a playback system in combination with a frame marking, search, playback and selection system is not taught or suggested.

[claim 15]

Regarding claim 15, the prior art does not teach or fairly suggest a search means as claimed which detects marking data after an end of shooting the subject image.
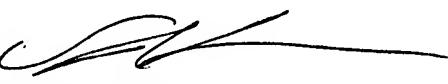
Visvanathan discloses a search means, but the system of Visvanathan searches for
marking data on frames as the frames are captured and not after an end of shooting as
claimed.

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-
7310. The examiner can normally be reached on M-F 11-7.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy J. Henn
7/8/2007